ABSTRACT OF THE DISCLOSURE

A semiconductor device comprises a semiconductor substrate, an interlayer insulating layer formed above the semiconductor substrate, a first metal interconnection embedded in the interlayer insulating layer with a surface thereof exposed to the same plane as a surface of the interlayer insulating layer, a diffusion preventive layer formed on at least the first metal interconnection to prevent diffusion of a metal included in the first metal interconnection, a nitrogen-doped silicon oxide layer formed on the diffusion preventive layer, a fluorine-doped silicon oxide layer formed on the nitrogen-doped silicon oxide layer, and a second metal interconnection embedded in the fluorine-doped silicon oxide layer with a surface thereof exposed to the same plane as a surface of the fluorine-doped silicon oxide layer, and electrically connected to the first metal interconnection.